Constipation in Children

National Digestive Diseases Information Clearinghouse

National Institute of Diabetes and Digestive and Kidney Diseases

What is constipation in children?

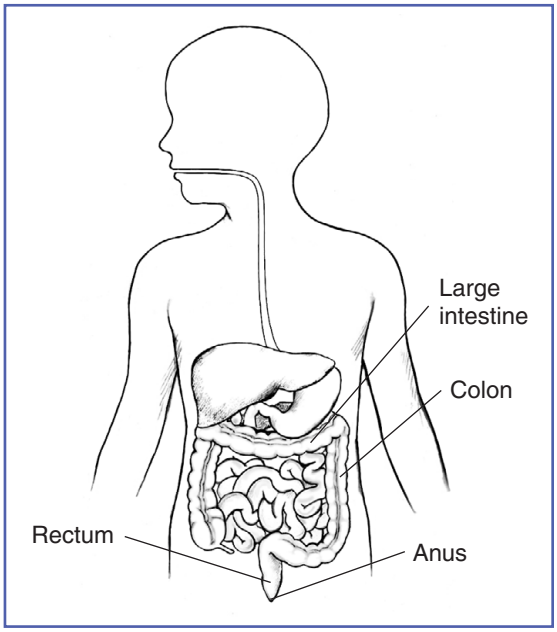
Constipation in children is a condition in which a child has fewer than two bowel movements a week or has bowel movements with stools that are hard, dry, and small, making them painful or difficult to pass. The child may feel bloated or have pain in the abdomen—the area between the chest and hips. Children with constipation may be unable to push all of the stool out of their body.

Constipation can be acute, which means sudden and lasting a short time, or chronic, which means lasting a long time, even years. Most constipation is acute and not dangerous. In rare cases, children can have chronic constipation.

What is the gastrointestinal (GI) tract?

The GI tract is a series of hollow organs joined in a long, twisting tube from the mouth to the anus. The body digests food using the movement of muscles in the GI tract, along with the release of hormones and enzymes. Organs that make up the GI tract are the mouth, esophagus, stomach, small intestine, large intestine—which includes the appendix, cecum, colon, and rectum—and anus. The intestines are sometimes called the bowel. The last part of the GI tract—called the lower GI tract—consists of the large intestine and anus.

The large intestine absorbs water and any remaining nutrients from partially digested food passed from the small intestine. The large intestine then changes waste from liquid to a solid matter called stool. Stool passes from the colon to the rectum. The rectum is located between the last part of the colon—called the sigmoid colon—and the anus. The rectum stores stool prior to a bowel movement. During a bowel movement, stool moves from the rectum to the anus, the opening through which stool leaves the body.



The lower GI tract

How common is constipation in children?

Constipation is quite common in children. Almost 5 percent of pediatric office visits and 25 percent of referrals to gastroenterology specialists—doctors who specialize in digestive diseases—are for constipation in children.[1]

What causes constipation in children?

Constipation is caused by stool spending too much time in the colon. The colon absorbs too much water from the stool, making it hard and dry. Hard, dry stool is more difficult for the muscles of the rectum to push out of the body.

Common factors or disorders that lead to constipation in children are

- diets low in fiber
- medications
- ignoring the urge to have a bowel movement
- specific diseases and conditions
- functional GI disorders

Diets Low in Fiber

A common cause of constipation is a diet with too little fiber. Fiber is a substance in foods that comes from plants. Fiber helps stool stay soft so it moves smoothly through the colon. Liquids such as water and juice help fiber to be more effective.

Medications

Medications that can cause constipation in children include

- pain medications, especially narcotics
- antacids that contain aluminum and calcium
- some antidepressants
- anticholinergics—medications that relax the bladder muscles to prevent urgent, frequent, or uncontrolled urination

Ignoring the Urge to Have a Bowel Movement

Children most commonly develop constipation as a result of holding in stool. As the child squeezes the muscles around the anus to prevent a bowel movement, stool is pushed back into the rectum. Eventually, the muscles in the rectum and lower colon stretch, reducing muscle tone and causing the child to retain stool. Fluid continues to be absorbed from the stool, causing the stool to become hard, dry, and difficult to pass. Children may withhold stool because they are feeling stressed about potty training, are embarrassed to use a public bathroom, do not want to interrupt playtime, or are fearful of having a painful or an unpleasant bowel movement.

[1]Blackmer AB, Farrington EA. Constipation in the pediatric patient: an overview and pharmacologic considerations. *Journal of Pediatric Health Care.* 2010;24(6):385–399.

Specific Diseases and Conditions

Certain diseases and conditions can delay movement of stool through the GI tract and cause constipation, including

- botulism—a rare but serious illness caused by a toxin from a bacterium that affects the nerves and causes constipation. Infant botulism is usually caused by consuming contaminated honey.
- Hirschsprung disease—a birth defect in which the large intestine is lacking some nerve cells, which means the signals that tell the muscles to push stool along are missing; stool remains in the large intestine and causes blockage.
- obstructive conditions that block part of the lower GI tract.
- diabetes and other metabolic or endocrine disorders that disrupt the process the body uses to get or make energy from food.

Read more about Hirschsprung disease in *What I need to know about Hirschsprung Disease* at *www.digestive.niddk.nih.gov.*

Functional GI Disorders

Functional GI disorders are problems caused by changes in how the GI tract works. Children with a functional GI disorder have frequent symptoms; however, the GI tract does not become damaged. Functional constipation often occurs in children during one of three periods:

- when infants are transitioned from breast milk to formula or when solid foods are introduced
- when toddlers are being toilet trained and attempt to control bowel movements
- when children start school and avoid using the bathroom at school for bowel movements

Functional constipation is diagnosed in children up to 4 years of age who have had at least two of the following symptoms for 1 month:[2]

- two or fewer bowel movements per week
- at least one episode of fecal incontinence—accidental leakage of solid or liquid stool—per week in toilet-trained children
- history of excessive stool retention
- history of painful or hard bowel movements
- presence of a large fecal mass in the rectum
- history of large-diameter stools that may block the toilet

[2]Di Lorenzo C, Rasquin A, Forbes D, et al. Childhood functional gastrointestinal disorders: child/adolescent. In: Drossman DA, ed. *Rome III: The Functional Gastrointestinal Disorders.* 3rd ed. Lawrence, KS: Allen Press, Inc.; 2006: 754–761.

Functional constipation is diagnosed in children 4 to 18 years of age who have had at least two of the following symptoms for 2 months and do not have irritable bowel syndrome (IBS):[2]

- two or fewer bowel movements per week
- at least one episode of fecal incontinence per week
- history of excessive stool retention
- history of painful or hard bowel movements
- presence of a large fecal mass in the rectum
- history of large-diameter stools that may block the toilet

IBS is a functional GI disorder with symptoms that include abdominal pain or discomfort, often reported as cramping, along with diarrhea, constipation, or both. Read more in *Irritable Bowel Syndrome in Children* at *www.digestive.niddk.nih.gov.*

What are the signs of constipation in children?

Signs of constipation in children include the following:

- postures that indicate the child is holding in stool, such as standing on tiptoes and then rocking back on the heels of the feet, clenching buttocks muscles, and other unusual, dancelike behaviors. Parents often mistake such postures as attempts to push out stool.
- abdominal pain and cramping.
- stool in the child's underwear. Delaying a bowel movement can result in a large mass of stool in the rectum, called a fecal impaction. Stool builds up behind the impaction and may unexpectedly leak, soiling a child's underwear. Parents often mistake this soiling as a sign of diarrhea.
- urinary incontinence. Stool in the colon can press against the bladder and cause daytime or nighttime wetting.

When should a child with constipation see a health care provider?

A child should see a health care provider if symptoms of constipation last for more than 2 weeks. A child should see a health care provider sooner if the child has constipation and one or more of the following symptoms that may indicate a more serious health problem:

- fever
- vomiting
- blood in the stool
- a swollen abdomen
- weight loss

How is the cause of constipation in children diagnosed?

To diagnose the cause of constipation in children, the health care provider takes a medical history, performs a physical exam, and may order specific tests.

Medical History

The medical history includes questions about a family history of constipation and the child's bowel habits, dietary history, and social situations. Bowel habits include the time after birth for the first bowel movement and frequency and consistency of bowel movements. Dietary history includes what the child usually eats and drinks. Social situations that may affect bowel movements include day care attendance and toilet training. The health care provider will also ask whether the child has a disorder or is taking medication that can cause constipation.

Physical Exam

A physical exam should include feeling the child's abdomen for swelling, tenderness, and masses and listening for bowel sounds. The health care provider may perform a rectal exam with a gloved, lubricated finger to evaluate the tone of the muscle that closes off the anus—called the anal sphincter—and to detect tenderness, obstruction, or blood. The health care provider may perform a test for blood in the stool by placing a small sample of the child's stool on a paper card and adding a drop or two of testing solution. A color change is a sign of blood in the stool.

Diagnostic Tests

Diagnostic testing is not usually needed for children with constipation unless they do not respond to treatment. In some cases, blood may be tested to determine whether a specific disease or condition is causing the constipation. Blood drawn at a health care provider's office or a commercial facility is sent to a lab for analysis.

An x ray of the abdomen may be performed to look for problems causing the child's constipation. An x ray is a picture created by using radiation and recorded on film or a computer. The amount of radiation used is small. An x ray is performed at a hospital or an outpatient center by an x-ray technician, and the images are interpreted

by a radiologist—a doctor who specializes in medical imaging. Anesthesia is not needed. The child will lie on a table or stand during the x ray. The x-ray machine is positioned over the abdominal area. The child will hold his or her breath as the picture is taken so that the picture will not be blurry. The child may be asked to change position for additional pictures.

Other diagnostic tests performed depend on the suspected underlying cause based on the medical history and physical exam.

How is constipation in children treated?

Treatment for constipation in children may include one or more of the following:

- changes in eating, diet, and nutrition
- behavioral changes
- medication

Eating, Diet, and Nutrition

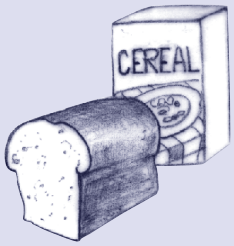
Dietary changes to help treat constipation in children include drinking prune juice and increasing fruits and vegetables. Children should drink liquids throughout the day. A health care provider can recommend about how much a child should drink each day based on the child's age, health, and activity level and where the child lives.

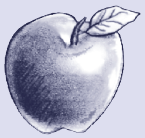
The Academy of Nutrition and Dietetics recommends that daily consumption of fiber be "age plus 5" grams for children.[3] A 7-year-old child, for example, should get "7 plus 5," or 12, grams of fiber a day. Children often eat too many refined and processed foods from which the natural fiber has been removed. A health care provider can help plan a diet with the appropriate amount of fiber. A list of high-fiber foods is shown on page 7. For children prone to constipation, limiting foods that have little or no fiber, such as ice cream, cheese, meat, and processed foods, is also important.

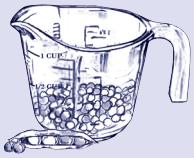
[3]Slavin JL. Position of the American Dietetic Association: health implications of dietary fiber. *Journal of the American Dietetic Association.* 2008;108:1716–1731.

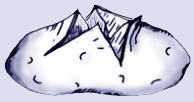
Examples of Foods That Have Fiber

Beans, cereals, and breads	Fiber
1/2 cup of beans (navy, pinto, kidney, etc.), cooked	6.2–9.6 grams
1/2 cup of shredded wheat, ready-to-eat cereal	2.7–3.8 grams
1/3 cup of 100% bran, ready-to-eat cereal	9.1 grams
1 small oat bran muffin	3.0 grams
1 whole-wheat English muffin	4.4 grams
Fruits	
1 small apple, with skin	3.6 grams
1 medium pear, with skin	5.5 grams
1/2 cup of raspberries	4.0 grams
1/2 cup of stewed prunes	3.8 grams
Vegetables	
1/2 cup of winter squash, cooked	2.9 grams
1 medium sweet potato, baked in skin	3.8 grams
1/2 cup of green peas, cooked	3.5–4.4 grams
1 small potato, baked, with skin	3.0 grams
1/2 cup of mixed vegetables, cooked	4.0 grams
1/2 cup of broccoli, cooked	2.6–2.8 grams
1/2 cup of greens (spinach, collards, turnip greens), cooked	2.5–3.5 grams









Source: U.S. Department of Agriculture and U.S. Department of Health and Human Services, *Dietary Guidelines for Americans, 2010.*

Behavioral Changes

Older children should be encouraged to use the toilet shortly after meals to promote regular stool passage. Some children may respond well to a reward system. Children who are still in the process of toilet training may need to take a break from toilet training until the constipation resolves.

Medications

Initial treatment of constipation in children often involves a thorough cleansing of the bowel. An enema involves flushing water or laxative into the anus using a special squirt bottle.

Laxatives are medications that loosen stool and increase bowel movements. Different laxatives work in different ways. Children should take medication until their bowel habits are normal for an extended period of time and they have overcome their holding behavior. If treatment is stopped too soon, a child will likely become constipated again. Caregivers should not give children laxatives unless told to do so by a health care provider. Read more about different types of laxatives in *Constipation* at *www.digestive.niddk.nih.gov.*

Oral therapies can also be used to clear out the bowel. Both enemas and oral therapies can usually be given at home as directed by a child's health care provider. However, a child who does not respond to treatment may need to be admitted to the hospital.

What are the complications of constipation in children?

Constipation in children can lead to fecal impaction if hard stool packs the intestine and rectum so tightly that the normal pushing action of the colon is not enough to expel the stool. The impaction should be cleared using an enema or large doses of oral laxatives for other treatments to be effective. Constipation in children can also lead to anal fissures—small tears in the anus that may cause itching, pain, or bleeding—or rectal prolapse—a condition in which the rectum slips so that it protrudes from the anus.

Points to Remember

- Children who have constipation pass fewer than two bowel movements a week or have bowel movements with stools that are hard, dry, and small, making them painful or difficult to pass.
- Constipation can be acute, which means sudden and lasting a short time, or chronic, which means lasting a long time, even years. Most constipation is acute and not dangerous. In rare cases, children can have chronic constipation.
- Constipation in children can be caused by
  - diets low in fiber
  - medications
  - ignoring the urge to have a bowel movement
  - specific diseases and conditions
  - functional gastrointestinal (GI) disorders
- Signs of constipation in children include the following:
  - postures that indicate the child is holding in stool, such as standing on tiptoes and then rocking back on the heels of the feet, clenching buttocks muscles, and other unusual, dancelike behaviors
  - abdominal pain and cramping
  - stool in the child's underwear
  - urinary incontinence
- To diagnose the cause of constipation in children, the health care provider takes a medical history, performs a physical exam, and may order specific tests.
- Treatment for constipation in children may include one or more of the following:
  - changes in eating, diet, and nutrition
  - behavioral changes
  - medication
- Constipation in children can lead to fecal impaction if hard stool packs the intestine and rectum so tightly that the normal pushing action of the colon is not enough to expel the stool. Constipation in children can also lead to anal fissures or rectal prolapse.

Hope through Research

The National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) and other components of the National Institutes of Health (NIH) conduct and support basic and clinical research into many digestive disorders in children, including constipation.

Clinical trials are research studies involving people. Clinical trials look at safe and effective new ways to prevent, detect, or treat disease. Researchers also use clinical trials to look at other aspects of care, such as improving the quality of life for people with chronic illnesses. To learn more about clinical trials, why they matter, and how to participate, visit the NIH Clinical Research Trials and You website at *www.nih.gov/health/clinicaltrials.* For information about current studies, visit *www.ClinicalTrials.gov.*

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Acknowledgments

Publications produced by the Clearinghouse are carefully reviewed by both NIDDK scientists and outside experts. This publication was reviewed by Carlo Di Lorenzo, M.D., Nationwide Children's Hospital.

You may also find additional information about this topic by visiting MedlinePlus at *www.medlineplus.gov.*

This publication may contain information about medications and, when taken as prescribed, the conditions they treat. When prepared, this publication included the most current information available. For updates or for questions about any medications, contact the U.S. Food and Drug Administration toll-free at 1–888–INFO–FDA (1–888–463–6332) or visit *www.fda.gov.* Consult your health care provider for more information.

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The National Digestive Diseases Information Clearinghouse (NDDIC) is a service of the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK). The NIDDK is part of the National Institutes of Health of the U.S. Department of Health and Human Services. Established in 1980, the Clearinghouse provides information about digestive diseases to people with digestive disorders and to their families, health care professionals, and the public. The NDDIC answers inquiries, develops and distributes publications, and works closely with professional and patient organizations and Government agencies to coordinate resources about digestive diseases.

This publication is available at *www.digestive.niddk.nih.gov.*

National Institute of Diabetes and Digestive and Kidney Diseases

NIH Publication No. 13–4633
September 2013

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